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**Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals**

**Sub-Committee of Experts on the Transport of Dangerous Goods**

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Item 5 (b) of the provisional agenda
**Transport of gases: miscellaneous**

# Provision for the carriage of waste gas cartridges (UN No. 2037)

**Transmitted by the expert from Ireland***

## Background

1. At the 103rd session of the Working Party on the Transport of Dangerous Goods the delegate from Ireland presented informal document INF.18 to discuss the potential for including provisions in the European Agreement concerning the International Carriage of dangerous goods by road (ADR) for waste gas cartridges (UN No. 2037), similar to those that are in place for waste aerosols (UN No. 1950). As the relevant discussions were multimodal in scope, the Working Party invited the representative of Ireland to forward the proposal to the Sub-Committee of Experts on the Transport of Dangerous Goods.

## Introduction

2. Currently the Model Regulations contain provisions for carriage of waste UN1950 AEROSOLS, but there are no equivalent provisions for waste UN2037 RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable.

3. Both aerosols and gas cartridges are assigned to Class 2. The division into which the aerosols and gas cartridges fall is determined, respectively, by the criteria in special provisions 63 and 303 in Chapter 3.3 (see note in 2.2.2.1). Both aerosols and gas cartridges, under special provision 344, are subject to the provisions of 6.2.4, requirements

* In accordance with the programme of work of the Sub-Committee for 2017–2018 approved by the Committee at its eighth session (see ST/SG/AC.10/C.3/100, paragraph 98 and ST/SG/AC.10/44, para. 14).

for aerosol dispensers, small receptacles containing gas (gas cartridges) and fuel cell cartridges containing liquid flammable gas.

4. The carriage of waste aerosols (UN No. 1950) is provided for in special provision 327 which allows aerosols to be carried under the entry for the purposes of reprocessing or disposal. Under this special provision waste aerosols which are not leaking or severely deformed can be packed in accordance with packing instruction P207 and special packing provision PP87, or packing instruction LP200 and special packing provision L2, and need not be protected against movement and inadvertent discharge provided that measures are taken to prevent dangerous build-up of pressure and dangerous atmospheres. Special packing provision PP87 stipulates that packagings carried under special provision 327 must have a means of retaining any free liquid that might escape during carriage and that the packagings must be adequately ventilated to prevent the creation of flammable atmosphere and the build-up of pressure.

5. There are no equivalent provisions for waste gas cartridges (UN No. 2037).

## Proposal

### Option 1:

Amend special provision 327 in Chapter 3.3 as follows. New text is underlined.

> "327 Waste aerosols and waste gas cartridges consigned in accordance with 5.4.1.4.3 (c) may be transported under this entry for the purposes of reprocessing or disposal. They need not be protected against movement and inadvertent discharge provided that measures to prevent dangerous build up of pressure and dangerous atmospheres are addressed. Waste aerosols, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P207 and special provision PP87, or packing instruction LP200 and special packing provision L2. Waste gas cartridges, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P003 and special provisions PP17 and PPXX. Leaking or severely deformed aerosols and gas cartridges shall be transported in salvage packagings provided appropriate measures are taken to ensure there is no dangerous build up of pressure. Waste aerosols and waste gas cartridges shall not be transported in closed freight containers."

Amend P003 to add special packing provision PPXX as follows:

> **"PPXX** For UN 2037 waste gas cartridges carried in accordance with special provision 327, the packagings shall have a means of retaining any free liquid that might escape during carriage, e.g. absorbent material. The packagings shall be adequately ventilated to prevent the creation of flammable atmosphere and the build-up of pressure."

Amend accordingly, under UN entry 2037, columns 6 and 9 of the Dangerous Goods List in Chapter 3.2.

### Option 2:

Amend special provision 327 as follows. New text is underlined.

> "327 Waste aerosols and waste gas cartridges consigned in accordance with 5.4.1.4.3 (c) may be transported under this entry for the purposes of reprocessing or disposal. They need not be protected against movement and inadvertent discharge

provided that measures to prevent dangerous build up of pressure and dangerous atmospheres are addressed. Waste aerosols, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P207 and special provision PP87, or packing instruction LP200 and special packing provision L2. Waste gas cartridges, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P003 and special provisions PP17 and PPXX, or packing instruction LP200 and special packing provision L2. Leaking or severely deformed aerosols and gas cartridges shall be transported in salvage packagings provided appropriate measures are taken to ensure there is no dangerous build up of pressure. Waste aerosols and waste gas cartridges shall not be transported in closed freight containers."

Amend P003 to add special packing provision PPXX as follows:

**"PPXX** For UN 2037 waste gas cartridges carried in accordance with special provision 327, the packagings shall have a means of retaining any free liquid that might escape during carriage, e.g. absorbent material. The packagings shall be adequately ventilated to prevent the creation of flammable atmosphere and the build-up of pressure."

Amend LP200 as follows. New text is underlined and deleted text is ~~struck out~~.

| **LP200** | **PACKING INSTRUCTION** | **LP200** |
|---|---|---|
| This instruction applies to UN No. 1950 and UN 2037. | | |
| The following large packagings are authorized for aerosols and gas cartridges, provided that the general provisions of **4.1.1** and **4.1.3** are met:<br>Rigid large packagings conforming to the packing group II performance level, made of:<br>steel (50A);<br>aluminium (50B);<br>metal other than steel or aluminium (50N);<br>rigid plastics (50H);<br>natural wood (50C);<br>plywood (50D);<br>reconstituted wood (50F);<br>rigid fibreboard (50G). | | |
| **Special packing provision:**<br>**L2** The large packagings shall be designed and constructed to prevent dangerous movement ~~of the aerosols~~ and inadvertent discharge during normal conditions of carriage. For waste aerosols and waste gas cartridges carried in accordance with special provision 327, the large packagings shall have a means of retaining any free liquid that might escape during carriage, e.g. absorbent material. The large packagings shall be adequately ventilated to prevent the creation of a flammable atmosphere and the build-up of pressure. | | |

Amend accordingly, under UN entry 2037, columns 6, 8 and 9 of the Dangerous Goods List in Chapter 3.2.

## Justification

6. Many gas cartridges have an appearance quite similar to aerosols and thus the general public may not be aware of the difference, so both aerosols (UN 1950) and gas

cartridges (UN 2037) will very often end up together in collection bins at public amenity sites for the purposes of reprocessing or disposal.

7. After use and removal from the operating device the valves on all gas cartridges (UN 2037) may not re-seal perfectly. It was reported in Ireland that waste gas cartridges at an industrial site were collected in a plastic drum with a removable head. On removal of the top a distinct gas smell was experienced, which indicated that a flammable atmosphere was building up inside the drum. It would serve to improve safety if the requirements for ventilation and a means of retaining free liquid as contained in PP87 were applied to waste gas cartridges.

8. P003, which currently applies to gas cartridges, does contain a general requirement that packagings shall be designed and constructed to prevent inadvertent discharge, but as gas cartridges do not contain a release mechanism, this will not alert to the possibility that used cartridges may leak. There are also the puncture type gas cartridges e.g. small camping gas cartridges, which may still contain gas residues at the time of disposal.

9. This proposal would serve to bring current practices of at many public amenity sites, i.e. that of placing waste aerosols (UN No. 1950) and waste gas cartridges (UN No. 2037) together in packagings for the purposes of transport for reprocessing or disposal, in line with the transport of dangerous goods regulation.